

U.S. Patent Application Serial No. 10/088,107  
Response filed December 21, 2004  
Reply to OA dated August 26, 2004

**REMARKS**

Claims 1-20 are pending in this application, with claims 3, 10-16, 18 and 20 currently withdrawn from consideration. No amendment is made in this Response. It is believed that this Amendment is fully responsive to the Office Action dated **August 26, 2004**.

**Interview Summary**

Applicant's agent, Daniel Geselowitz, conducted a personal interview with Examiner Zalukaeva on December 7, 2004. In the interview, the teachings of the Freeman '934 and Hann '464 references were discussed in detail with regard to claim 1. In particular, the meaning of the disclosure in Freeman in column 4, lines 12-25 and column 6, lines 11-30, was reviewed. It was agreed in the interview that Applicant should repeat Applicant's arguments in a Response under 37 CFR 1.116. These arguments are incorporated below into the responses to the rejections.

**Claims 1, 2, 4-6 and 8 stand rejected under 35 U.S.C. §102(b) as being anticipated by Freeman et al. (U.S. 5,531,934) or Hann et al. (U.S. 5,568,464). (Office action paragraph no. 4)**

Reconsideration and withdrawal of the rejection are respectfully requested in view of the following remarks.

In the Response dated June 2, 2004, (on pages 6-7), Applicant argued that "Freeman does not disclose a copolymer of component (A) with a monomer having an ethylenically unsaturated double

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bond (B).” The Examiner now states:

“The crux of [Applicant’s] argument is that Freeman discloses polyaminoacids as part of detergents for inhibiting corrosion, while the instant claims call for water absorbent material comprising the polymer. In response to this it is noted that since the polymers of Freeman are the same as the instantly claimed polymers, they are fully capable of being used [in] water absorbent articles.”

The Examiner goes on to comment that the preamble of a claim is not limiting.

Applicant respectfully notes that the first part of the Examiner’s comments is an incorrect synopsis of Applicant’s arguments. Applicant’s argument was not based on the recitation of “water absorbent” in the preamble, but rather on the chemical difference of the claimed composition from any taught in Freeman.

On page 6 of the Office action, the Examiner addresses Applicant’s arguments regarding the structures of the compounds disclosed Freeman. The Examiner states that:

“[Applicant’s] arguments that the compounds of Freeman’s examples 21-38 overlap with component A-1 but not component A are not persuasive, because component A in claims 1, 2, 8, 9, 17 and 19 are defined as anhydropolyaminoacid.” (emphasis in original)

Applicant respectfully disagrees with the Examiner here. Component (A) in claim 1 is not merely an anhydropolyamino acid, but is “**an anhydropolyamino acid having at least one ethylenically unsaturated double bond in a molecule**.” The difference between component (A-1) and component (A) is the ethylenically unsaturated double bond. Freeman discloses anhydropolyamino acids (i.e., component (A-1)), but does not disclose a compound corresponding to component (A).

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To clarify this point, Applicant refers to the disclosure in the present application that examples of component (A) include those prepared by reacting (A-1), the anhydropolyamino acid, with (A-2), which has a functional group having reactivity with the anhydropolyamino acid **and** has a double bond, (see page 4; line 8-14 in the specification). The resulting component (A) has an ethylenically unsaturated double bond. The double bonds of component (A) are later reacted with component (B) in an ethylenic polymerization to produce a copolymer.

During the interview, it was agreed that an important issue in the rejection is the nature of the "copolymers of amino acids" in Freeman, column 4, lines 4-11. These lines state:

"The term "poly(amino acids)," is meant to include hydrolyzed and non-hydrolyzed poly(amino acids). "Hydrolyzed polyamino acids" are anhydropolyamino acids which have been reacted or hydrolyzed with at least one common base or acid.

The term "poly(amino acids)" as herein defined is also meant to include homopolymers of amino acids and copolymers of amino acids."

Applicant discussed the meaning of these lines in the interview. In Applicant's reading, the term "homopolymer" clearly refers to polypeptides made from one kind of amino acid, while "copolymer" refers to polypeptides made from more than one kind of amino acid. This portion of the disclosure does not include polymerization with monomers other than amino acids, and would **not include anything that would place an ethylenically unsaturated bond in the molecule.**

The second portion of Freeman at issue is column 6, lines 5-30, which read:

Optional additional monomers may be reacted with the compounds used to form the poly(amino acids). Optional monomers include for example carboxylic acids, hydroxycarboxylic acids, alcohols, alkoxylated alcohols, amines, alkoxylated amines, lactones, or lactams, or combinations thereof.

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Carboxylic acids useful as optional additional monomers have at least one carboxylic acid group and may be saturated or ethylenically unsaturated. Suitable carboxylic acids include for example formic acid, acetic acid, propionic acid, butyric acid, valeric acid, lauric acid, palmitic acid, stearic acid, behenic acid, oleic acid, capric acid, linoleic acid, linolenic acid, sorbic acid, myristic acid, undecanoic acid, naturally occurring fatty acid mixtures such as for example C<sub>12</sub> to C<sub>14</sub> or C<sub>16</sub> to C<sub>18</sub> fatty acid mixtures, acrylic acid, or methacrylic acid or combinations thereof. Additional suitable carboxylic acids are carboxylic acids having more than one carboxylic acid group such as oxalic acid, adipic acid, fumaric acid, maleic acid, itaconic acid, aconitic acid, succinic acid, malonic acid, suberic acid, azelaic acid, furan dicarboxylic acid, phthalic acid, terephthalic acid, diglycolic acid, glutaric acid, 1,2,3-propanetricarboxylic acid, 1,1,3,3-propanetetracarboxylic acid), 1,3,3,5-pantanetetracarboxylic acid, 1,1,2,2-ethanetetracarboxylic acid, or 1,2,3,4-butanetetracarboxylic acid or combinations thereof.

Applicant argued during the interview that the exact nature of the reaction involving the “optional additional monomers” is **not clearly indicated** in the reference, but would appear to be a **condensation** reaction at the N-terminal or C-terminal of the polypeptide. Applicant notes that of the numerous specific carboxylic acids listed, only a few (e.g., methacrylic and acrylic acids) have an ethylenically unsaturated double bond.

Applicant argues, as discussed with the Examiner in the interview, that these “optional additional monomers” are used in a **condensation** reaction in Freeman. This point was raised in the interview, with the Examiner initially taking the position that the “optional additional monomers” were being reacted through ethylenic polymerization.

Although the exact conditions of the **condensation** reaction are not given, Applicant believes that these are used in Freeman in a reaction that would **decompose the double bond**. For example,

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the polysuccinimide is manufactured in Freeman in a thermal condensation reaction of aspartic acid and orthophosphoric acid (Freeman, column 12, lines 16-19). (Note that the corresponding reaction in the present specification is the preparation of polysuccinimide in Synthetic Example 1 on page 23, which was carried out at 200 °C.) The double bond of an additional monomer such as acrylic acid would be almost certainly be decomposed under these high temperature conditions.

Applicant therefore maintains that there is no clear teaching or suggestion for a species corresponding to (A) in Freeman or Hann.

Applicant summarizes the comparison of the present invention to Freeman in the following table:

Present Invention	Freeman '934
(A-1) anhydropolyamino acid	anhydropolyaminoacids such as polysuccinimide
(A) an anhydropolyamino acid having at least one ethylenically unsaturated double bond in a molecule	No corresponding disclosure
(B) a water-soluble monomer having an ethylenically unsaturated double bond	No corresponding disclosure
copolymer (A) + (B)	No corresponding disclosure

As noted, Applicant contends that the ethylenic unsaturation in the “optional additional monomer” would not survive the synthesis of the anhydropolyamino acid. However, even if the double bond survived, there is clearly no teaching in Freeman of such a compound further (ethylenically) polymerized with a water-soluble monomer to form a copolymer, as in the present

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claims.

The disclosure of Hann is very similar to that of Freeman, and the same arguments apply to the rejection over Hann.

Applicant therefore asserts that claims 1, 2, 4-6 and 8 are not anticipated by Freeman et al. (U.S. 5,531,934) nor by Hann et al. (U.S. 5,568,464).

**Claims 7 and 9 stand rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Freeman.** (Office action paragraph no. 5)

Reconsideration and withdrawal of the rejection are respectfully requested in view of the following remarks.

Claims 7 and 9 depend ultimately from claim 1. As discussed above in regard to Office action paragraph no. 4, Applicant asserts that Freeman '934 does not disclose any compound corresponding to component (A) of claim 1. Applicant further argues that there is no suggestion in the reference for such a component, and no suggestion for further reaction of such a component with a water-soluble monomer having an ethylenically unsaturated double bond, to make a copolymer. Therefore, claim 1, and the claims dependent from claim 1, are non-obvious over Freeman.

**Claims 17 and 19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Freeman in view of JP 10025984.** (Office action paragraph no. 6)

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Reconsideration and withdrawal of the rejection are respectfully requested in view of the following remarks.

In the Response dated June 2, 2004, on page 9, Applicant argued that claim 17 requires a copolymer made from components (A) and (B) as in claim 1, and that neither Freeman nor JP '984 discloses such a copolymer.

In the final Office action, the Examiner responds that: "the manner of presenting the polymer in claim 17 overlaps with [Freeman's] disclosure given the broadest possible interpretation [in meaning of] the terms in the claims."

Applicant respectfully disagrees. In the response to Office action paragraph no. 4, above, Applicant has reiterated and clarified the argument that Freeman does not disclose any compound corresponding to component (A) or the copolymer of (A) and (B) in claim 1. Applicant submits that claim 17 also recites component (A) and the copolymer, and that accordingly, claims 17 and 19 are non-obvious over Freeman.

JP '984 is cited for the arrangement of fiber material and polymer, and does not disclose or suggest component (A) or the copolymer of the present claims.

Claims 17 and 19 are therefore novel and non-obvious over Freeman and JP 10025984, taken separately or in combination.

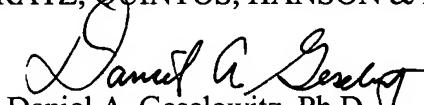
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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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